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SCIENCE

FRIDAY, OCTOBER 5, 1888.

NOTWITHSTANDING THE EMPHATIC warnings of all experienced Arctic navigators, and the difficulties encountered on the 'Alert' expeditions, the projected route from England through Hudson Strait to Fort Churchill continues to be discussed in England and Canada; and quite recently the establishment of a line of steamers on this route was advocated by no less an authority than Commodore A. H. Markham, in a lecture delivered before the Royal Geographical Society. As he failed, however, to disprove any of the objections raised against the practicability of this route, which are chiefly founded on the always imminent danger of Fox Channel ice, his remarks fail to convince us. There is no doubt that powerful but small steamers can accomplish the journey annually with comparative safety, but this is far from being sufficient to make Hudson Strait a practicable trade-route. The premium on this route would have to be enormously high on account of the great number of dangers to navigation, and at all seasons the steamers would be liable to long delays. Sir Charles Tupper, who was present at this discussion, did not take as favorable a view as Markham, while Dr. Rae condemned the plan as wholly untenable. It seems somewhat surprising to see it again revived after its impracticability appeared to have been thoroughly proved by the results of the Canadian Hudson Bay expeditions.

A LESSON IN COMMERCIAL GEOGRAPHY.

SIR C. W. WILSON, in his presidential address to the geographical section of the British Association, dwelt upon the importance of commercial geography and its bearings upon the economic welfare of England. He gave a sketch of the history of the world's trade, and thus outlined one of the most important branches of commercial geography. His remarks on the value of this study, although referring to England, are well worth being remembered. "My object has been," he said, "to draw attention to the supreme importance to this country of the science of commercial geography. That science is not confined to a knowledge of the localities in which those products of the earth which have a commercial value are to be found, and of the markets in which they can be sold with the greatest profit. Its higher aims are to divine, by a combination of historical retrospect and scientific foresight, the channels through which commerce will flow in the future, and the points at which new centres of trade must arrive in obedience to known laws. A precise knowledge of the form, size, and geological structure of the globe; of its physical features; of the topographical distribution of its mineral and vegetable products, and of the varied forms of animal life, including man, that it sustains; of the influence of geographical environment on man and the lower animals; and of the climatic conditions of the various regions of the earth, — is absolutely essential to a successful solution of the many problems before us. If England is to maintain her commanding position in the world of commerce, she must approach these problems in the spirit of Henry the Navigator, and by high scientific training fit her sons to play their part like men in the coming struggle for commercial supremacy. The struggle will be keen, and victory will rest with those who have most fully realized the truth of the maxim that 'knowledge is power.'"

His lucid method of treating the questions of commercial geography will be seen from his interesting remarks on the Suez Canal, which are the more interesting, as they suggest a comparison to the effects of a canal through the American Isthmus.

"The opening of the Suez Canal, by diverting trade from the

Cape route to the Mediterranean, has produced, and is still producing, changes in the intercourse between the East and the West which affect this country more nearly, perhaps, than any other European state. The changes have been in three directions.

"First, An increasing proportion of the raw material and products of the East is carried direct to Mediterranean ports, by ships passing through the canal, instead of coming, as they once did, to England for distribution. Thus Odessa, Trieste, Venice, and Marseilles are becoming centres of distribution for Southern and Central Europe, as Antwerp and Hamburg are for the North; and our merchants are thus losing the profits they derived from transmitting and forwarding Eastern goods to Europe. It is true that the carrying-trade is still, to a very great extent, in English hands; but should this country be involved in a European war, the carrying-trade, unless we can efficiently protect it, will pass to others, and it will not readily return. Continental manufacturers have always been heavily handicapped by the position England has held since the commencement of the century, and the distributing trade would doubtless have passed from us in process of time. The opening of the canal has accelerated the change, to the detriment of English manufactures, and consequently of the national wealth; and it must tend to make England less and less each year the emporium of the world. We are experiencing the results of a natural law that a redistribution of the centres of trade must follow a re-arrangement of the channels of commerce.

"Second, The diversion of traffic from the Cape route has led to the construction of steamers for special trade to India and the East through the canal. On this line coaling stations are frequent, and the seas, excepting in the Bay of Biscay, are more tranquil than on most long voyages. The result is, that an inferior type of vessel, both as regards coal-stowage, speed, endurance, and seaworthiness, has been built. These 'canal wallahs,' as they are sometimes called, are quite unfitted for the voyage round the Cape, and, should the canal be blocked by war or accident, they would be practically useless in carrying on our Eastern trade. Since the canal has deepened, they have improved, for it has been found cheaper to have more coal-stowage, but they are still far from being available for the long voyage round the Cape. Had the canal not been made, a large number of fine steamers would gradually have been built for the Cape route, and, though the sailing-ships which formerly carried the India and China trade would have held their own longer, we should by this time have had more of the class of steamer that would be invaluable to us in war-time; and our trade would not have been liable, as it is now, to paralysis by the closing of the canal.

"Third, Sir William Hunter has pointed out, that, since the opening of the canal, India has entered the market as a competitor with the British workman; and that the development of that part of the empire as a manufacturing and food-exporting country will involve changes in English production which must for a time be attended by suffering and loss. Indian trade has advanced by rapid strides, the exports of merchandise have risen from an average of fifty-seven millions for the five years preceding 1874 to eighty-eight millions in 1884, and there has been an immense expansion in the export of bulky commodities. Wheat, which occupied an insignificant place in the list of exports, is now a great staple of Indian commerce, and the export has risen since 1873 from one and three-quarters to twenty-one million hundredweights. It is almost impossible to estimate the ultimate dimensions of the wheat trade, and it is only the forerunner of other trades in which India is destined to compete keenly with the English and European producers.

"The position in which England has been placed by the opening of the canal is in some respects similar to that of Venice after the discovery of the Cape route; but there is a wide difference in the